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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DHARIA, PRABODH M	

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/849,195	GUTTAG ET AL.	
	Examiner	Art Unit	
	Prabodh M. Dharia	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *16-168* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05-31-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. **Status:** Applicant representative has requested on telephone interview on April 20, 2005 more detailed elaboration of rejection of Claim 1, of non-final office action mailed on 04-14-2005 which have been placed of record in the file. Claims 1-15 are pending in this action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yumoto et al. (6,542,142 B2) in view of Scheffer et al. (5,585,816).

Regarding Claim 1, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, Lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61 teaches matrix (Webster defines form of matrix as arrays of elements) of light modulating emitting element) of light modulating elements (Col. 15, Line 10).

However, Yamamoto et al. fails to teach recursive feedback control means for controlling at least one pulse width using recursive feedback, said pulse width driving said electrode means.

However, Scheffer et al. teaches and recites light is being controlled by modulating pulse width (Abstrtact, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55) and recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); control means for controlling at least one pulse width using recursive feedback (Col. 10, Lines 4-25, Col. 10, Line 57 to Col. 11, Line 20, Col. 18, lines 46-52, figures 6, item 96, figure 12), said pulse width driving said electrode means (Abstract, Col. 19, Lines 40-44, Col. 1, Lines 25-28, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55, figures 6, item 96, figure 12).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Scheffer et al. in to the teaching of Yumoto et al. to be able to control pulse width using recursive feedback control to control light intensity of each light modulating element or pixel to produce better resolution display (better contrast, better gray scale).

Regarding Claim 2, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, Lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61) of light modulating elements (Col. 15, Line 10).

Scheffer teachs display device; comprising recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); display device driver IC's output are inputted (Col. 17, Lines 13-33, Col. 18, Lines 6-45 see figure 11) to recursive feed back circuit (figure 6,11, Item 96, figure 12, Col. 10, Lines 57-61, Col. 18, Lines 46-48).

Regarding Claim 3, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61) of light modulating elements (Col. 15, Line 10).

Scheffer teachs display device; comprising recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); display device driver IC's output are inputted (Col. 17, Lines 13-33, Col. 18, Lines 6-45 see figure 11) to recursive feed back circuit (figure 6,11, Item 96, figure 12, Col. 10, Lines 57-61, Col. 18, Lines 46-48).

Regarding Claim 4, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61) of light modulating elements (Col. 15, Line 10).

Scheffer et al. teaches display device; comprising recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); display device driver IC's output are inputted (Col. 17, Lines 13-33, Col. 18, Lines 6-45 see figure 11) to recursive feed back circuit (figure 6,11, Item 96, 12, Col. 10, Lines 57-61, Col. 18, Lines 46-48).and outputted bit is an intermediate output bit (Col. 20, Line 2 to Col. 21 Line 2, where Mth (arbitrary position output bit, i.e. it is also an intermediate output position bit) position bit data generated by device driver IC's represent information Ij for the display state inputted to recursive feedback (figure 6,11, Item 96, figure 12, Col. 10, Lines 57-61, Col. 18, Lines 46-48 and Col. 25, Line 30 to Col. 27, Line 7, describes

direct application of the processing of the intermediate state output bit to produce better contrast controlling light emitting element (pixel)).

4. Claims 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yumoto et al. (6,542,142 B2) in view of Scheffer et al. (5,585,816) as applied to claims 1-4 above, and further view of Van Dijk (4,847,854).

Regarding Claim 5, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61) of light modulating elements (Col. 15, Line 10).

Scheffer et al. teaches recursive feedback control (Webster defines recursive feedback as repeatedly feedback) figure 6,11, Item 96, 12, Col. 10, Lines 57-61, teaches how it achieves recursive feedback, figure 6, Col. 18, Lines 46-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (time interval) (Col. 18, Lines 35-48) of each pixel information (Col. 20, Lines 15-20, Col. 17, Lines 41-51) using supplied clock timing (Col. 19, Lines 25-28).

However, Yumoto modified by Scheffer et al. fails to teach device includes a backplane and wherein said backplane includes said recursive feedback control means.

However, VanDijk teaches device includes a backplane (Col. 4, Lines 30-51) and backplane includes (Col. 4, Lines 64-67, Col. 5, Lines 15-18, Col. 14, Lines 51-56, Col. 15, Lines 13-16, 47-68, Col. 16, Lines 17-21) recursive feedback control (Col. 15, Line 50 to Col.

16, Line 21 Using Kalman's filtering technique is based not only feedback, it also lies in use of recursive algorithm, minimizes storage requirement, which is exactly the applicant's motivation to use recursive feed back control see specification page 28, 191); Van Dijk teaches panel interface controller (Col. 4, Lines 30-47, teaches Eurocards as interface panel controller interfacing controller, Eurorack backplane board; Col. 16, Lines 22-53, teaches (recursive feed back) Kalman's filter is controlled by apple computer).

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Van Dijk in to the teaching of Yumoto modified by Scheffer et al. to be able control changes in the pulse width using recursive feedback control based upon all the data entered.

Regarding Claim 6, Van Dijk teaches device includes a panel interface controller (Col. 4, Lines 30-47, teaches Eurocards as interface panel controller interfacing controller, Eurorack backplane board) and wherein said panel interface controller includes said recursive feedback control means (Col. 16, Lines 22-53, teaches (recursive feed back) Kalman's filter is controlled by apple computer).

Scheffer et al. teaches panel interface controller (display panel Col. 3, Line 10, interface controller (Col. 16, Line 62 to Col. 17, Line 15).

Regarding Claim 7, Van Dijk teaches electrode means comprises at least two electrodes (Col. 2, Lines 10-15).

Regarding Claim 8, Yumoto et al. teaches array of light modulating elements is part of a visual display apparatus (Col. 1, Line 10-16).

Van Dijk teaches a visual display apparatus including said array of light modulating elements (Col. 16, Lines 58-60, Col. 17, Lines 10-14, 18-20, Lines 31-41, Col. 28, Lines 8-13).

Regarding Claim 9, Yumoto et al. teaches arrays of light modulating element (arrayed liquid crystal molecules) between two glass (silica byproduct) substrates (front and back, glass plates) (Col. 15, Lines 8-11, 21-23, 26-28, 38-45).

Scheffer et al. teaches arrays of light modulating element (arrayed liquid crystal molecules) between tow glass (silica byproduct) substrates (front and back, glass plates) (Col. 5, Lines 18-27).

Van Dijk teaches backplane (Col. 4, Lines 30-47, teaches Eurocards as interface panel controller interfacing controller, Eurorack backplane board).

Regarding Claim 10, Scheffer et al. teaches recursive feedback is explicit (Webster defines recursive feedback as repeatedly feedback) Col. 10, Lines 13-22, Lines 57-61, teaches how it achieves recursive feedback, figure 6,) showing specific circuits (figure 6, Col. 10, Lines 4-25, Col. 10, Line 57 to Col. 11, Line 20, Col. 26, Lines 47-67, Col. 7, Lines 43-60).

Regarding Claim 11, Van Dijk teaches recursive feedback is implicit as Kalman's filtering technique based feedback lies in the use of a recursive algorithm, implied to achieve

recursive feedback (see figure 59,60,61) to reduce noise and storage requirements (Col. 15, Line 13 to Col. 16, Line 21, Col. 4, Lines 32-38, 44-51, Col.11, Lines 4-6, Col. 14, Lines 51-56).

Regarding Claim 12, Scheffer et al. teaches recursive feedback control generates pulse width comprises at least two pulse width (figure 6, Col. 18, Lines 35-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (multiple pulse widths combined or pulse width divided), defined as time interval, since time interval of column signal (video data) defines the pulse width of the column signal). Van Dijk teaches pulse width comprises at least two pulse widths (Col. 4, Lines 64-67, Col. 5, Lines 15-18, Col. 14, Lines 51-56, Col. 15, Lines 13-16, 47-68, Col. 16, Lines 17-21).

Regarding Claim 13, Scheffer et al. teaches pixel value bits for controlling a pixel value (Col. 5, Lines 19-34, Col. 6, Lines 1-16, pixels are considered as light emitting and modulating element, abstract, Col. 25, lines 31-38 where light is being controlled by modulating frames) of the pulse width and recursive feedback control means only uses some of said pixel value bits to determine a next state of the pulse width (figure 6, Col. 18, Lines 35-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (multiple pulse widths combined or pulse width divided), defined as time interval, since time interval of column signal (represents video data or pixel value) defines the pulse width of the column signal, and Col. 19, Line 51 to Col. 21, Line 2, Col. 25, Line 52 to Col. 26, Line 55, Col. 28, line 33 to Col. 29, Line 3 teaches using recursive feedback using pixel value bits to determine next state of the pulse width).

Van Dijk teaches pulse width comprises at least two pulse widths (Col. 4, Lines 64-67, Col. 5, Lines 15-18, Col. 14, Lines 51-56, Col. 15, Lines 13-16, 47-68, Col. 16, Lines 17-21, Col. 27, Lines 20-25).

Regarding Claim 14, Yumoto et al. teaches a visual display apparatus including said array of light modulating elements (Col. 1, Lines 10-16, Col. 15, Lines 3-11).

Scheffer et al. teaches Visual display apparatus (Col. 1, Lines 11,12) including said arrays of light modulating element (see abstract, Col. 5, Lines 19-46, Col. 6, Lines 1-16, pixels are considered as light emitting and modulating element, arrayed liquid crystal molecules) between tow glass (silica byproduct) substrates (front and back, glass plates) (Col. 5, Lines 18-27).

Van Dijk teaches a visual display apparatus (Col. 16, Lines 58-60, Col. 17, Lines 10-14, 18-20, Lines 31-41, Col. 28, Lines 8-13).

Allowable Subject Matter

5. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is an examiner's statement of reasons for allowance:

a device comprising: electrode means comprising at least **one electrode for controlling a light modulating element of an array of light modulating elements; and recursive feedback**

control means for controlling at least one pulse width using recursive feedback, said pulse width driving said electrode means and array of light modulating elements is part of a visual display apparatus; and said visual display apparatus is an LCOS device; wherein said visual display apparatus includes pH indicating means indicating when a liquid crystal and/or the environment surrounding said liquid crystal of said visual display apparatus is damaged.

Cited references on 892's fails to anticipate individually as well as render obviousness individually or in combination bold and underlined claimed above.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

8. Applicant's arguments filed 05-19-2005 have been fully considered but they are not persuasive.

Applicant argues combination of Yumoto and Scheffer et al. do not obviate.

Examiner disagrees, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, Lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61 teaches matrix (Webster defines form of matrix as arrays of elements) of light modulating emitting element) of light modulating elements (Col. 15, Line 10).and Scheffer et al. teaches recites light is being controlled by modulating pulse width (Abstrtact, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55) and recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); control means for controlling at least one pulse width using recursive feedback (Col. 10, Lines 4-25, Col. 10, Line 57 to Col. 11, Line 20, figures 6, item 96, figure 12), said pulse width driving said electrode means (Abstract, Col. 1, Lines 25-28, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55, figures 6, item 96, figure 12). The combination does teach applicant's claim 1, limitations, therefore they do obviate.

Applicant argues Scheffer et al. fails to recite recursive feedback.

Examiner disagrees, as Scheffer et al. teaches recursive feedback control (Webster defines recursive feedback as repeatedly feedback) Col. 10, Lines 13-22, Lines 57-61, teaches how it achieves recursive feedback, figure 6, Col. 18, Lines 46-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (time interval) (Col. 18, Lines 35-48) of each pixel information (Col. 20, Lines 15-20, Col. 17, Lines 41-51) using supplied clock timing (Col. 19, Lines 25-28).

Applicant argues Section A in rejection of dependent claims 2-4, Item 1-3, Scheffer et al. fails to teach drive output bit.

Examiner disagrees as applicant has claimed drive output bit of a device comprising of electrodes, light modulating element and recursive feedback. Scheffer does teach display device; comprising light modulating element, electrode and recursive feedback; display device driver IC's output are inputted to recursive feed back circuit (figure 6,12,24,20,21, Col. 19, Lines 45-57).

Applicant argues in rejection of dependent claims 2-4, Sec. A, Item 4, Scheffer et al. fails to teach output bit is an intermediate output bit.

Examiner disagrees as applicant has claimed drive output bit of a device comprising of electrodes, light modulating element and recursive feedback is an intermediate output bit. Scheffer et al. does teach output bit of a device comprising of electrodes, light modulating element and recursive feedback is an intermediate output bit, display device driver IC's output are inputted to recursive feed back circuit (figure 6,12,24,20,21, Col. 19, Lines 45-57) and outputted bit is an intermediate output bit (Col. 20, Line 2 to Col. 21 Line 2, where Mth (arbitrary position output bit, i.e. it is also an intermediate output position bit) position bit data generated by device driver IC's represent information Ij for the display state inputted to recursive feedback (figure 6, Col. 18, Lines 45-47, Col. 10, Lines 7-25, and Col. 25, Line 30 to Col. 27, Line 7, describes direct application of the processing of the intermediate state output bit to produce better contrast controlling light emitting element (pixel)).

Applicant argues in rejection of dependent claims 2-4, Sec. A, Item 5, the cited reference of Yumoto and Scheffer et al. cited columns, figures and lines numbers are not adequate to meet ***prima facie*** requirement of MPEP and forces applicant to speculate Office action assertions.

Examiner disagrees as Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, Lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61 teaches matrix (Webster defines form of matrix as arrays of elements) of light modulating emitting element) of light modulating elements (Col. 15, Line 10); Scheffer et al. teaches and recites light is being controlled by modulating pulse width (Abstrtact, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55) and recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); control means for controlling at least one pulse width using recursive feedback (Col. 10, Lines 4-25, Col. 10, Line 57 to Col. 11, Line 20, Col. 18, lines 46-52, figures 6, item 96, figure 12), said pulse width driving said electrode means (Abstract, Col. 19, Lines 40-44, Col. 1, Lines 25-28, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55, figures 6, item 96, figure 12).

The combination does teach applicant's claim 1, limitations, therefore they do obviate. The teaching of Yumoto and Scheffer et al. cited columns, figures and lines numbers are adequate to meet ***prima facie*** requirement of MPEP. The claimed limitations of Claims 1-4 are not cluttered together in one small paragraph in cited references, however, all the cited columns, figures and lines numbers do adequately teach applicant's claimed limitation.

Applicant argues in Sec, B regarding claims rejection of dependent claims 5-14 combination of Yumoto, Sheffer et al. and Van Dijk do not obviate.

Examiner disagrees, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yumoto et al. teaches a device comprising: electrode means comprising at least one electrode (Col. 15, Line 13) for controlling (Col. 15, Lines 13-17) a light modulating element (Col. 15, Line 13,14) of an array (Col. 17, Lines 53-61 teaches matrix (Webster defines form of matrix as arrays of elements) of light modulating emitting element) of light modulating elements (Col. 15, Line 10); Scheffer et al. teaches and recites light is being controlled by modulating pulse width (Abstrtact, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55) and recursive feedback (item 96, figure 12, figure 6, Col. 10, Lines 57-61); control means for controlling at least one pulse width using recursive feedback (Col. 10, Lines 4-25, Col. 10, Line 57 to Col. 11, Line 20, Col. 18, lines 46-52, figures 6, item 96, figure 12), said pulse width driving said electrode means (Abstract, Col. 19, Lines 40-44, Col. 1, Lines 25-28, Col. 25, Lines 52-54, Col. 27, Lines 8-11, Col. 26, Lines 47-55, figures 6, item 96, figure 12) and VanDijk teaches device includes a backplane (Col. 4, Lines 44-51) and backplane includes (Col. 4, Lines 64-67, Col. 5, Lines 15-18, Col. 14, Lines 51-56, Col. 15, Lines 13-16, 47-68, Col. 16, Lines 17-21) recursive feedback control (Col. 15, Line 50 to Col. 16, Line 21 Using Kalman's filtering technique is based not only feedback, it also lies in use of recursive algorithm, minimizes storage requirement, which is exactly the applicant's motivation

to use recursive feed back control see specification page 28, 191). The combination does teach applicant's claim 5-14, limitations, therefore they do obviate.

Applicant argues in Claim rejection Sec. B dependent claim 5, Item 1, Scheffer et al. and Van Dijk fails to recite or disclose recursive feedback.

Examiner disagrees, as Scheffer et al. teaches recursive feedback control (Webster defines recursive feedback as repeatedly feedback) Col. 10, Lines 13-22, Lines 57-61, teaches how it achieves recursive feedback, figure 6, Col. 18, Lines 46-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (time interval) (Col. 18, Lines 35-48) of each pixel information (Col. 20, Lines 15-20, Col. 17, Lines 41-51) using supplied clock timing (Col. 19, Lines 25-28).

VanDijk teaches device includes a backplane (Col. 4, Lines 30-51) and backplane includes (Col. 4, Lines 64-67, Col. 5, Lines 15-18, Col. 14, Lines 51-56, Col. 15, Lines 13-16, 47-68, Col. 16, Lines 17-21) recursive feedback control (Col. 15, Line 50 to Col. 16, Line 21 Using Kalman's filtering technique is based not only feedback, it also lies in use of recursive algorithm, minimizes storage requirement, which is exactly the applicant's motivation to use recursive feed back control see specification page 28, paragraph 191).

Applicant argues in Claim rejection Sec. B dependent claim 6, Item 2, Scheffer et al. and Van Dijk fails to recite or disclose panel interface controller.

Examiner disagress as Scheffer et al. teaches panel interface controller (display panel Col. 3, Line 10, interface controller (Col. 16, Line 62 to Col. 17, Line 15).

Van Dijk teaches panel interface controller (Col. 4, Lines 30-47, teaches Eurocards as interface panel controller interfacing controller, Eurorack backplane board; Col. 16, Lines 22-53, teaches (recursive feed back) Kalman's filter is controlled by apple computer).

Applicant argues in Claim rejection Sec. B dependent claim 9, Item 3, Yumoto et al. Scheffer et al. and Van Dijk fails to recite or disclose light modulating element on silicon backplane.

Examiner disagrees, as Yumoto et al. teaches arrays of light modulating element (arrayed liquid crystal molecules) between tow glass (silica byproduct) substrates (front and back, glass plates) (Col. 15, Lines 8-11, 21-23, 26-28, 38-45).

Scheffer et al. teaches arrays of light modulating element (arrayed liquid crystal molecules) between tow glass (silica byproduct) substrates (front and back, glass plates) (Col. 5, Lines 18-27).

Van Dijk teaches backplane (Col. 4, Lines 30-47, teaches Eurocards as interface panel controller interfacing controller, Eurorack backplane board).

Applicant argues in Claim rejection Sec. B dependent claim 10,11, Item 4,5, Yumoto et al. Scheffer et al. and Van Dijk fails to recite or disclose fails to teach explicit (Webster defines specific details) and implicit (Webster defines implied or implicated).

Examiner disagrees as, Scheffer et al. teaches explicit recursive feedback (Webster defines recursive feedback as repeatedly feedback) Col. 10, Lines 13-22, Lines 57-61, teaches

how it achieves recursive feedback, figure 6,) showing specific circuits (figure 6, Col. 10, Lines 13-22, Lines 57-61).

Van Dijk teaches recursive feedback is implicit as Kalman's filtering technique based feedback lies in the use of a recursive algorithm, implied to achieve recursive feedback (see figure 59,60,61) to reduce noise and storage requirements (Col. 15, Line 13 to Col. 16, Line 21).

Applicant argues in Claim rejection Sec. B dependent claim 12, Item 6, Yumoto et al. Scheffer et al. and Van Dijk fails to recite or disclose fails to teach pulse width comprises at least two pulse width.

Examiner disagrees as Scheffer et al. teaches recursive feedback control generates pulse width comprises at least two pulse width (figure 6, Col. 18, Lines 35-52, Col. 10, Lines 7-25, teaches using figure 6, type recursive feed back generates (control) different pulse width (multiple pulse widths combined or pulse width divided), defined as time interval, since time interval of column signal (video data) defines the pulse width of the column signal).

Applicant argues in Claim rejection Sec. B dependent claim 13, Item 7, Yumoto et al. Scheffer et al. and Van Dijk fails to recite or disclose fails to teach pixel value bits for controlling a pixel value of the pulse width and recursive feedback control means only uses some of said pixel value bits to determine a next state of the pulse width.

Examiner disagrees, as Scheffer et al. pixel value bits for controlling a pixel value of the pulse width and recursive feedback control means only uses some of said pixel value bits to determine a next state of the pulse width (figure 6, Col. 18, Lines 35-52, Col. 10, Lines 7-25,

teaches using figure 6, type recursive feed back generates (control) different pulse width (multiple pulse widths combined or pulse width divided), defined as time interval, since time interval of column signal (represents video data or pixel value) defines the pulse width of the column signal, and Col. 19, Line 51 to Col. 21, Line 2, Col. 25, Line 52 to Col. 26, Line 55, Col. 28, line 33 to Col. 29, Line 3 teaches using recursive feedback using pixel value bits to determine next state of the pulse width).

Applicant argues in Claim rejection Sec. C, dependent claim 15, Item 1-3, and Item1,2 Yumoto et al. Scheffer et al. and Kang et al. fails teach visual display apparatus is an LCOS device; wherein said visual display apparatus includes pH indicating means indicating when a liquid crystal and/or the environment surrounding said liquid crystal of said visual display apparatus is damaged and disputes Ph indicator in Kang et al. is not same as pH indicator of applicant's teaching.

Examiner disagrees, as Kang et al. does teach LCOS (Liquid Crystal on Silicon) with Ph indicator. Applicant disagrees Ph indicator taught by Kang et al. is not same as pH indicator of applicant and provides chemical explanation how they differ. However, Kang et al. fails to teach pH indicating **means indicating when a liquid crystal and/or the environment surrounding said liquid crystal of said visual display apparatus is damaged** and cited prior art to establish Ph indicator's chemistry property as mentioned above **fails to teach LCOS**, examiner has decided to withdraw art rejection of claim 15. However, claim 15 is not allowable as being depended on dependent claim 14 which depended on independent claim 1. Claim 15 is being objected to as being dependent upon a rejected base claims 1, but would be allowable if rewritten

in independent form including all of the limitations of the base claims 1, and intervening claim 14.

Applicant repeats argument in section D about claims 1-15 as argued in claims 1-15 section A, B and C; alleges rejected claims in the office action are based on examiner's personal knowledge and alleges the supervisory examiner Bipin Shalawal refuses to provide name of the one ordinary skill in the chemistry art individual's information..

Examiner's has addressed all the limitation of all the claims applicant has argued in sections A, B and C. Examiner's search for prior art are only on the bases of interpretation of claims limitations provided by applicant's specification and Webster dictionary. The interpretation of the claims limitation are given broadest meaning as per MPEP using applicant's specification as well as Webster dictionary and using those interpretation prior arts are searched to reject applicant's claimed limitations. Supervisory examiner Bipin Shalwala during the interview explicitly told applicant's representative that applicant and his representative has an access to PAIR system on USPTO web site. All the correspondence of the application number 10849195, are accessible on the PAIR system. The search notes, on which examiner lists all the people accessed and discussed the prior art teaching is also part of the correspondence and is accessible on the PAIR system.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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AU2673

July 08, 2005

BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600